

## Patent Abstracts of Japan

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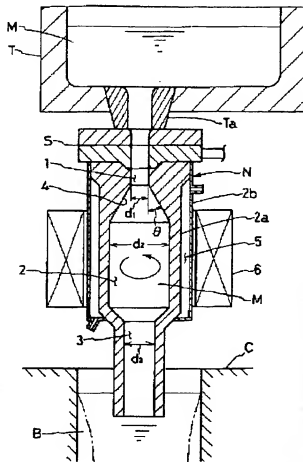
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TITLE : POURING NOZZLE FOR CONTINUOUS  
CASTING AND CONTINUOUS  
CASTING METHOD



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ABSTRACT : PURPOSE: To surely obtain the cooling effect through a nozzle wall by flowing molten metal without parting from the inner wall surface of nozzle even if the inner part of nozzle is not filled up with the molten metal and further, to surely obtain the revolution of the molten metal by the electromagnetic stirring in the pouring nozzle for continuous casting provided with an inner diameter enlarged part at the intermediate part connected to a flowing-in part of the molten metal.

CONSTITUTION: The diameter of an annular surface 4 connecting the upper flowing-in part 1 to the inner diameter enlarged part 2 is continuously enlarged toward the inner surface of the inner diameter enlarged part 2 from the inner surface of the flowing-in part 1. Further, the inner surface of a pouring nozzle N is formed in a truncated cone-like or an inside dome-like inclined annular surface having  $\geq 5^\circ$  to  $< 25^\circ$  inclination angle  $\theta$  to the nozzle axial line and on the other hand, the inner diameter of the discharging part 3 continued to the inner diameter enlarged part 2 is made larger than that of the flowing-in part 1. Further, a cooling gas flowing passage 5 and a rotary magnetic field coil 6 are arranged on the outer peripheral part of the inner diameter enlarged part 2. The cooling of the molten metal in a nozzle is stably performed and then, equiaxed crystal is increased and the generation of center segregation of a cast slab can be evaded.

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